the cable market performed better during this period of time than any other period shown. It was a time of thorough regulation.

The expanding market could attract higher quality programming simply because the potential increase in volume sales more than offset the increase in program costs. Higher quality programs, in turn, attracts more subscribers, which attracts better programming, etc.

There is obviously lag time, as entertainment entrepreneurs recognize and explore the nature of this expanding market.[63] There is also no reason to believe that this phenomenal growth would not have continued if regulation had continued. Indeed, the growth of homes passed slowed after deregulation.

During this period of regulation, real prices for basic service fell sharply and penetration rates increased. Again, there appears to have been no improvement in the growth of penetration after deregulation. During the period of deregulation, consumers experienced rapidly rising real prices.

Increasing income also supports greater expenditure for

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[63] Econometric analysis suggests that maturation of cable systems takes between eighteen months and four years (S.M. Besen, et al, "Economic Policy Research on Cable Television: Assessing the Costs and Benefits of Cable Deregulation," in MacAvoy (Ed.), Deregulation of Cable TV) American Enterprise Institute, Washington, D.C., 1977; Pacey, op. cit.; Webb, op. cit.

additional services. During the period of regulation the penetration of pay services skyrocketed. It flattened out after deregulation (see Figure IV-5).

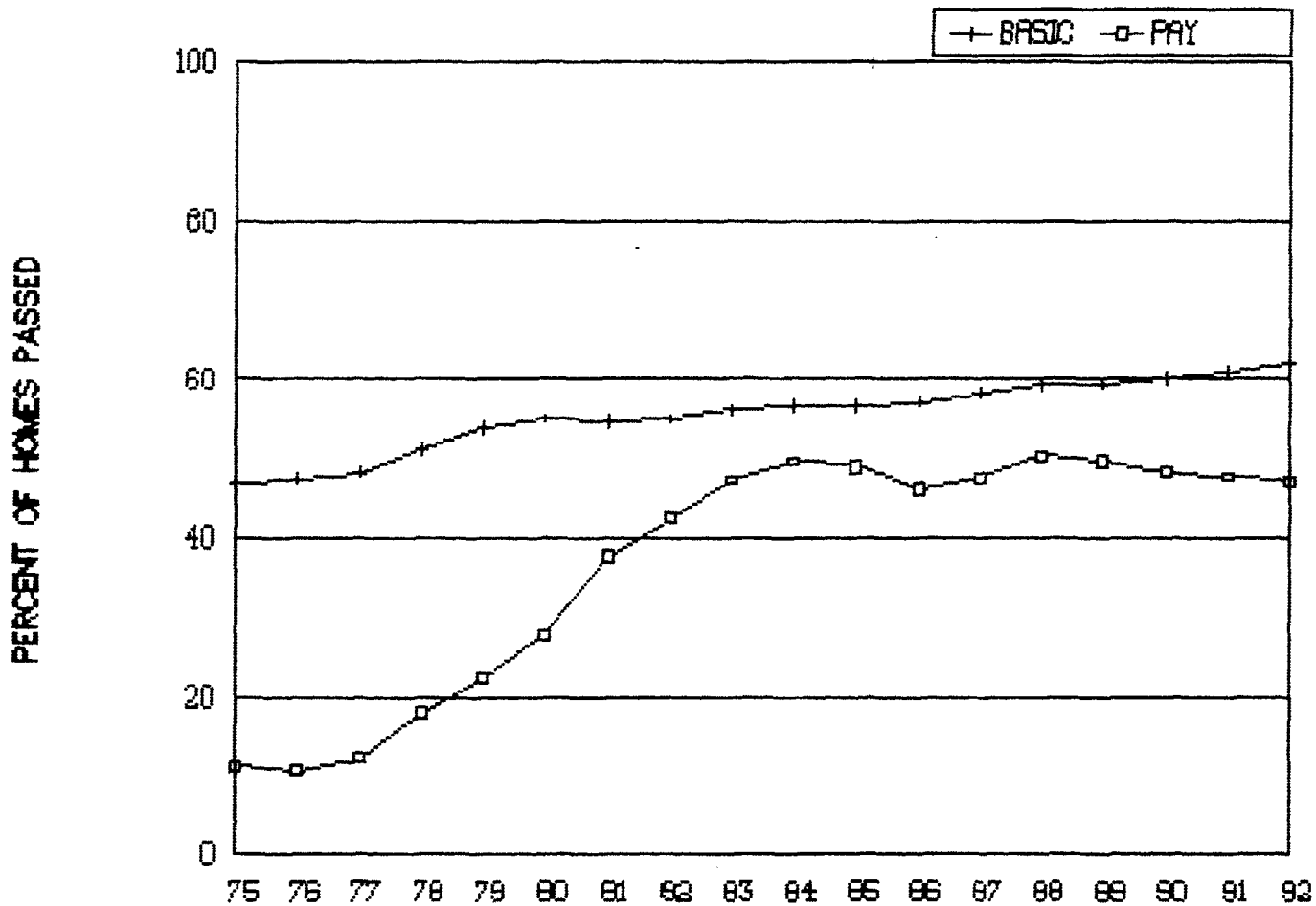
The 1981 to 1984 time frame is typified by much slower growth. Homes passed increased by just under 14 percent per year and subscribers increased by just over 14 percent per year. Prices were flat in real terms, while income fell. The fundamental dynamic here was the Reagan recession, which covered much of this period.

The 1984 to 1989 period is one of slowing expansion of cable systems and slowing increases in subscribers. It was a period of very strong income growth and dramatically rising prices. The growth of cable systems persisted, despite rapidly rising prices because of the growing income and maturation of the industry.

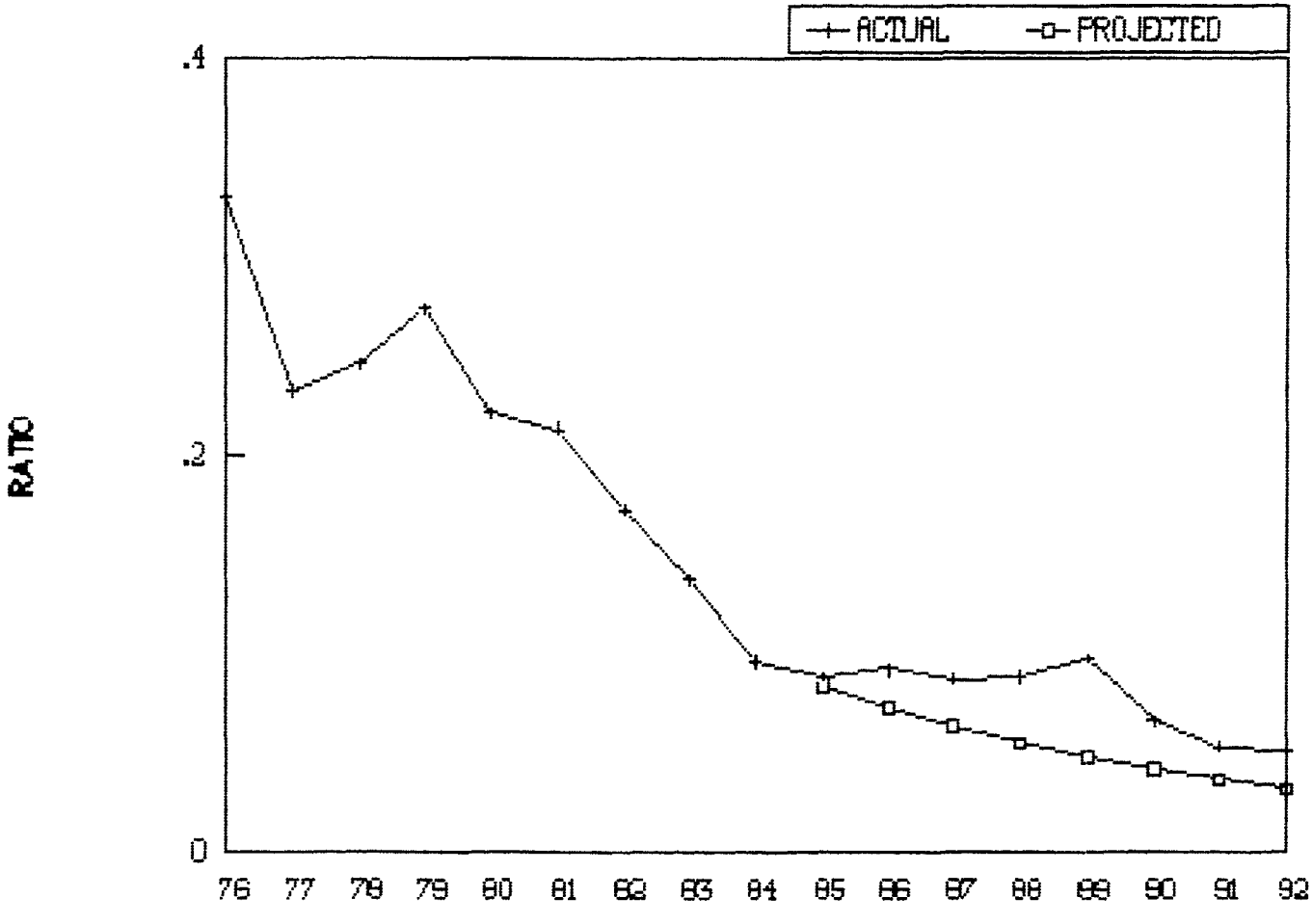
The period between 1989 and 1992 was typified by much slower growth of penetration and homes passed. Price increases continued, but in this period income was declining. Without income growth to offset rising prices, system expansion slowed. Moreover, as cable's physical network fills out, the rate of expansion is likely to decline.

Figure IV-6 illustrates the dynamic of capturing new

# FIGURE IV–5
# BASIC CABLE PENETRATION RATES



# FIGURE IV-6:
# RATIO OF NEW SUBSCRIBERS TO NON-SUBSCRIBING HOMES PASSED



subscribers. As cable systems pass more homes, more subscribers are added. We believe this increasing capture is part of the natural evolution of this "network" type of industry. Not only do costs decline and quality improve in this type of industry, but social processes of diffusion may augment this process. Even before deregulation, this developmental process was evident. As systems age they capture more subscribers. Indeed, as Figure IV-7, shows projecting out the pre-deregulation trend leads us to expect that there would be about 51.3 million subscribers by 1992, compared to the 55.5 million who actually subscribed in 1992.

## B. THE ABUSIVE POST-DEREGULATION MARKETPLACE

### 1. THE DYNAMICS OF MARKET POWER

Figure IV-8 depicts the shifts in the demand and supply curves since deregulation that is consistent with this understanding of the industry. For simplicity and sake of comparison with the industry's own argument, we have represented the cost savings as a shift in the supply curve, but the same argument can be presented utilizing a movement along a declining cost curve. We see a shift in the demand curve attributed to natural processes of network growth (on both the supply and demand sides) and income growth. Declining costs are combined with monopolistic pricing.

# FIGURE IV-7
# CABLE TV SUBSCRIBERS

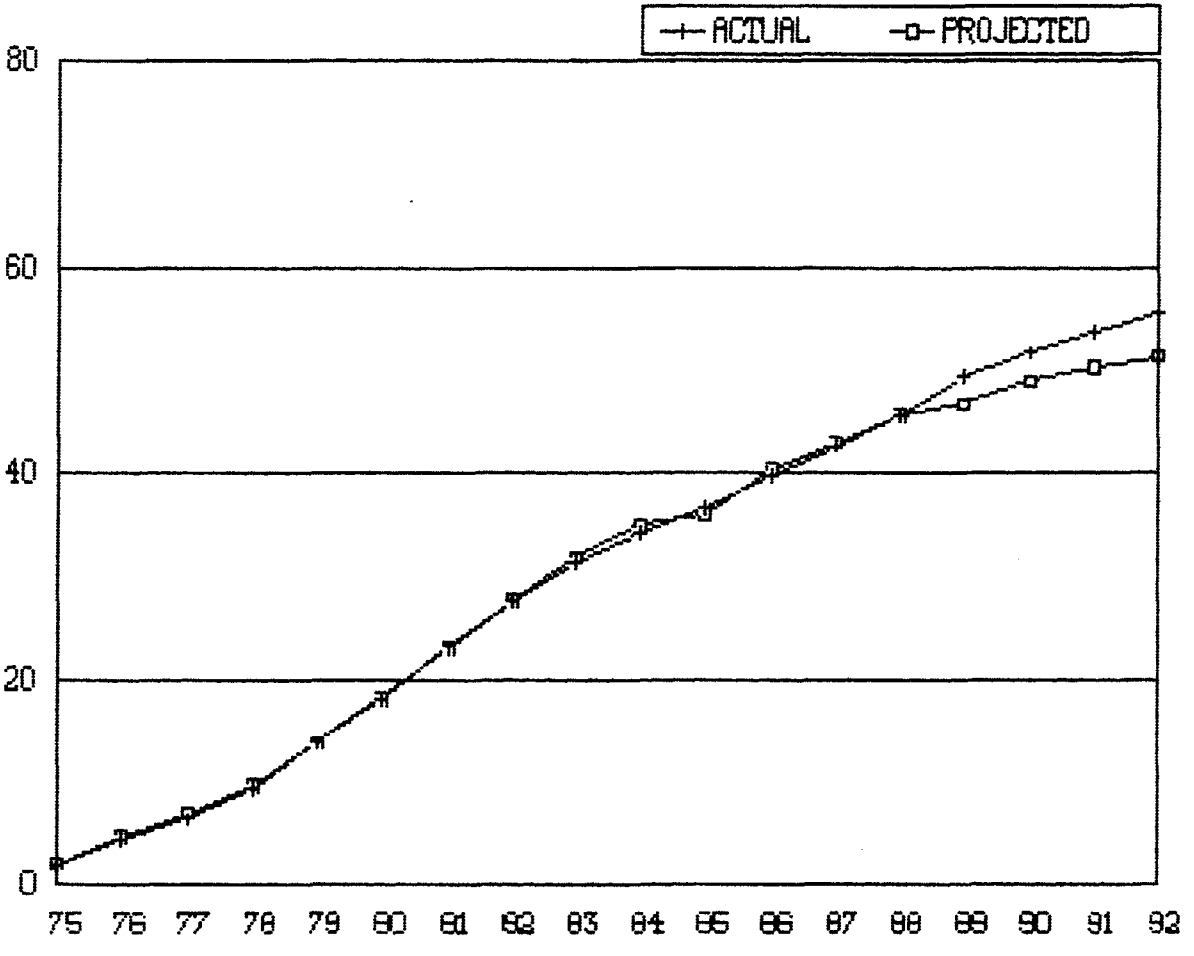
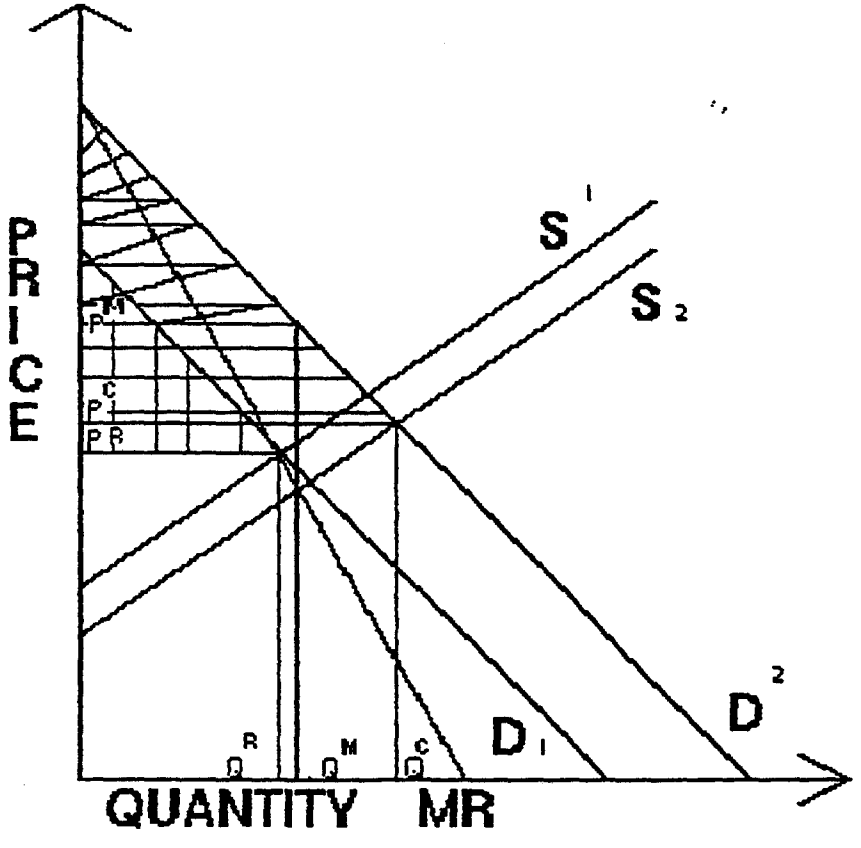


FIGURE IV–8
THE CONSUMER VIEW OF
CABLE DEREGULATION



Consumer surplus under regulation can be measured as the area beneath the demand curve (D1) and above the price line Pr (in Figure IV-8). This is designated by the vertical lines. After a shift in the demand curve and the supply curve, and a move to monopolistic pricing, consumer surplus is measured by the area with slanted lines. However, if competitive pricing prevailed, prices would fall close to the level at the onset of deregulation. Consumer surplus would be measured by the area indicated by the horizontal lines.

## 2. PRICE

Figures IV-9 and IV-10 show price performance before and after deregulation. They compare actual price changes with those predicted based on pre-deregulation pricing patterns, those based on actual competitive situations, and those based on econometric estimates from pre-deregulation data. They give very strong affirmation to the analysis above.

A simple projection of trends from the regulation period puts 1990 prices (the year for which data is available on systems subject to competition) at a level close to that observed for systems subject to competition.[64] The differences are striking. In competitive systems, rates are well over one-third lower per

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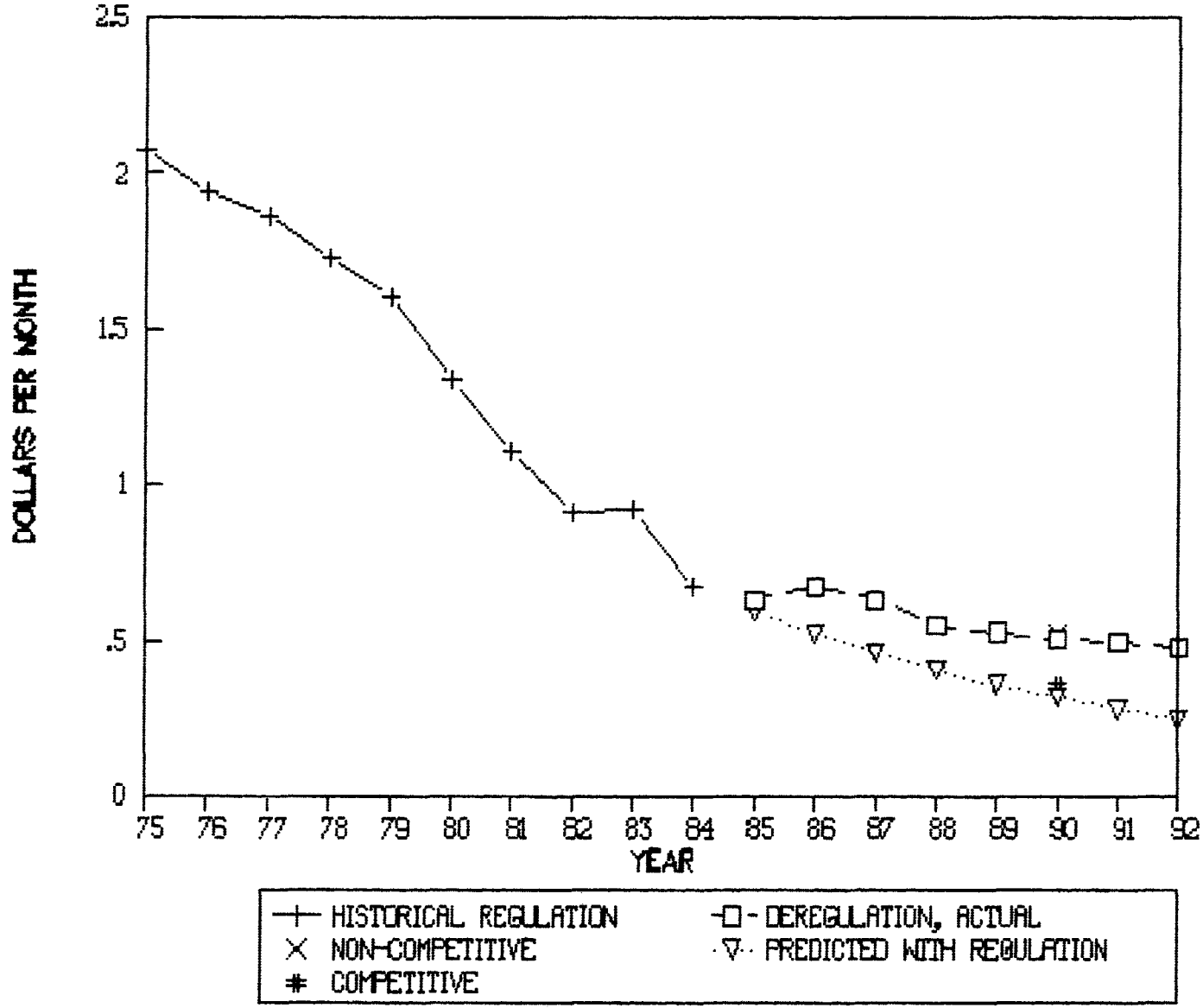
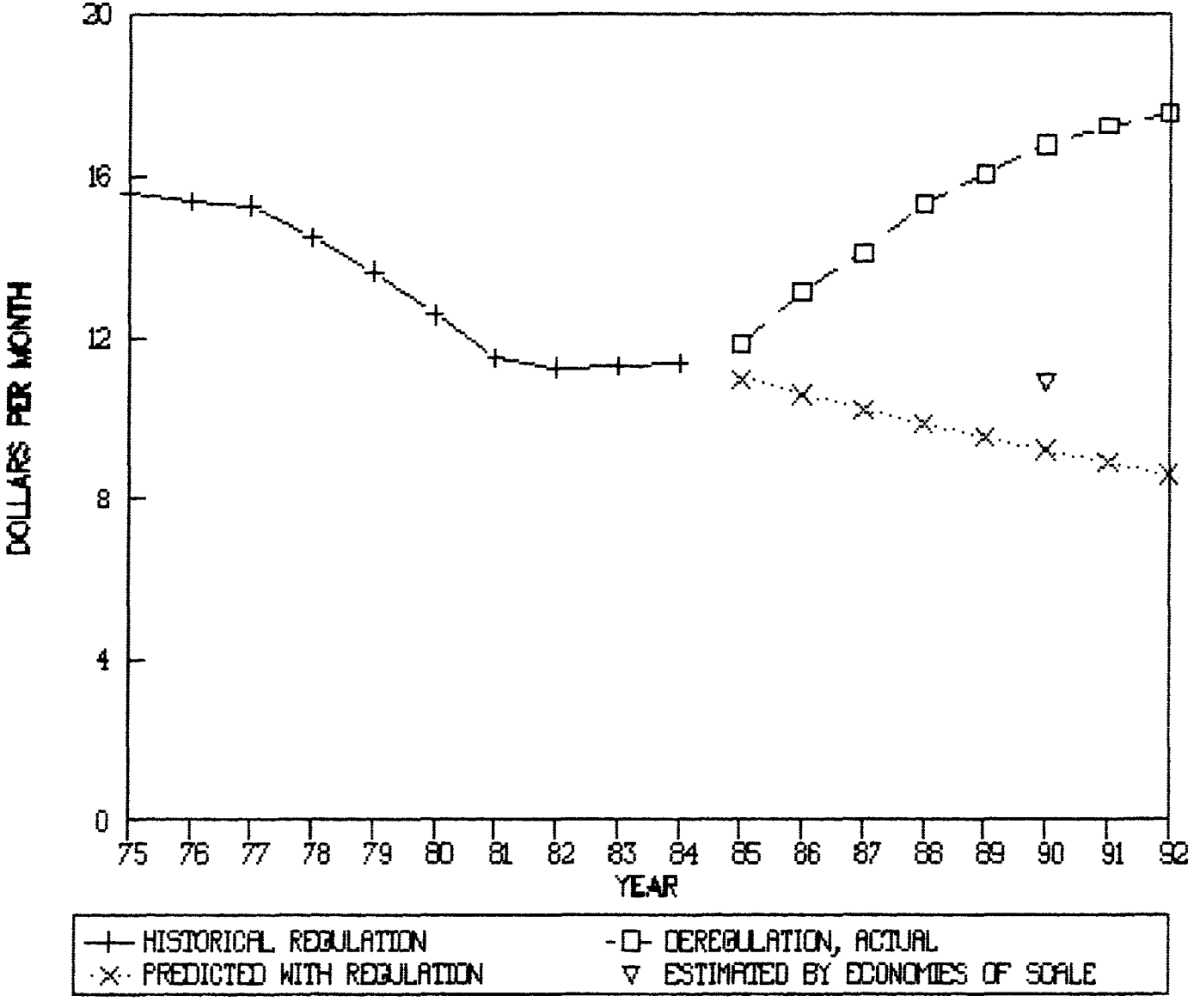
[64] This is based on the average annual change prior to 1984.

# FIGURE IV-9
# PRICE PER CHANNEL ($1990, CPI DEFLATOR)



# FIGURE IV–10
# PRICE PER MONTH ($ 1990, CPI DEFLATOR)



channel.[65] This results from charging lower rates for many more channels. Note as well that the monopoly systems have rates that are very similar to the national average.[66] The projection of the historical trend, which is based on the period of regulation shows that rates would be much closer to the competitive level if regulation had continued.[67]

This abusive pricing is not limited to aggregate levels. As market power has grown, the cable companies have also engaged in greater price discrimination and repackaged services to camouflage rate increases. Prior to deregulation, prices for

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[65] Rates are from Merline, J. W., "How to Get Better Cable TV at Lower Prices," Consumers' Research, May 1990. An econometric analysis of these rates suggests that actual differences are even larger (see Levin, S. L. and J. B. Meisel, Cable Television and Competition, Sixth Conference on New Directions for State Telecommunications Regulation, February 10-13, 1991).

[66] The projection of monthly average rates is obtained by applying the economies of scale in Noam, 1985, op. cit., to system growth after 1984.

[67] The effectiveness of regulation has been hotly debated. It seems clear that while cable regulation did not drive prices down to competitive levels, it certainly held them below monopoly levels. As May and Otsuka, op. cit., at 407, conclude

> This indicates that the local franchise regulation in the early 1980s neither constrained basic prices to marginal costs, nor permitted monopolistic pricing... the value suggests that basic prices were held considerably below monopoly levels.

See also (Zupan, M.A., "The Efficacy of Franchise Bidding in the Case of CATV: Some Systematic Evidence," Journal of Law and Economics, 32, 1989; Prager, R.A., "Franchise Bidding for Natural Monopoly: The Case of Cable Television in Massachusetts," Journal of Regulatory Economics, 1:1989; Hazlett, T. W., "The Demand to Regulate Franchise Monopoly: Evidence from CATV Rate Deregulation in California," Economic Inquiry, 29, 1991.

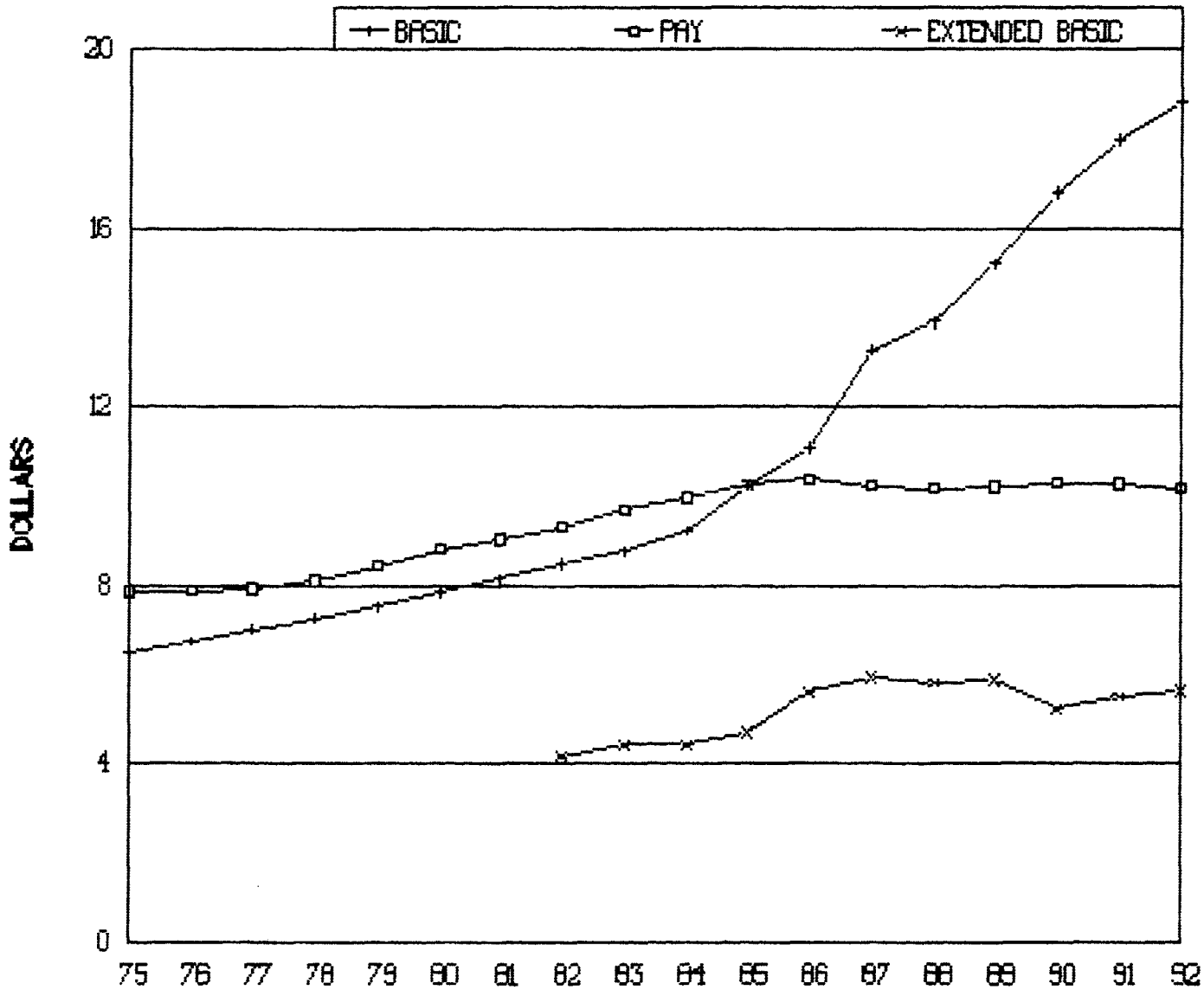
basic services and expanded or premium services moved together. After deregulation basic rates have skyrocketed, while prices for other services have not (see Figure IV-11). Instead of charging for the extended and premium services, retiering forced consumers to pay for access to these services in their basic rates. Operators bundled services to justify excessive rate increases.

It is clear that pricing/packaging in this way is intended to transform consumer surplus into producer surplus. Although consumers would be less willing to pay for certain elements of the larger cable programming package, they swallow the whole thing since their access to those elements they really want is tied those they do not want.

There is a formal theory of the extraction of consumer surplus that can be found in the economic and marketing literatures. The following is a recent statement of the approach from the Journal of Marketing

> Consider, for examplee, a case in which we have two products or services and can estimate the distributions of reservation prices (the maximum amounts buyers are willing to pay) for each product. by bundling the products together, we essentially create a new product. If the two products are independent in demand, some customers who would only by one of these if they were priced individually will now by both products. The reason is that the value these customers place on one product is so much higher than its price that the combined value of the two products exceeds the bundled price. In economic terminology, the consumer surplus (the amount by which the individual's reservation price exceeds the actual price paid) from the highly valued

# FIGURE IV-11
# CABLE RATES (NOMINAL DOLLARS)



product is transferred to the less valued product.[68]

The key point here is that the ability to add programming to the basic package and the ability to require basic service as a prerequisite for access to either expanded basic or per-channel or per-program services allows the cable operator to charge more for basic than its value. Access is bundled into the basic tier. Even where over-the-air signal might be competitive, this bundling gives cable operators the opportunity to exercise market power. People pay for something they apparently could get for free because they are actually buying something else, access to the multiple channels.

Pricing philosophy in the industry clearly exhibits an effort to capture consumer surplus. As an article in an industry journal pointed out just before deregulation:

> If viewers can purchase one channel and watch a second channel for free, they never will pay the market value of the second channel. A more profitable alternative for the pay television operator would be to offer program type A on the first channel and program type B on the second, and then sell both channels as a package. At an appropriate price, consumers will purchase the package. Even if the costs of scrambling were minimal, the package selling strategy would be more profitable than selling each channel individually.

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[68] Joseph P. Guiltinan, "The Price Bundling of Services: A Normative Framework," Journal of Marketing, 51: April (1987), at 75.

> The practice of bundling recognized that consumers have preferences not only for program types but for program variety. For example, some consumers might pay $25 for service A only; $25 for service B only, but $37.50 for a bundle of both A and B. Bundling is like an insurance policy. Whatever occurs, the consumer can watch his or her preferred program.
>
> But package selling may be attractive even aside from its insurance policy attributes. With package selling, the profitability of carrying a program type depends not only on how much revenue it generates on its own, but also increases the total package's revenues.[69]

By pumping up basic rates and cramming programming into the basic tier, cable operators continually confronted subscribers with the ultimate choice: "pay for the whole package or give up service." Rates for unbundled services were kept low. Not only is consumer surplus squeezed by adding programming that has little value, but the bundling of access to other tiers, whose prices were not rising, further squeezed consumers.[70]

### 3. MONOPOLY RENTS

Abusive pricing behavior is one direct measure of a failure

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[69] Celia Conrad, "Choosing Cable Programming Services," Cable TV and New Media, 4:9 (19868).

[70] Soon after deregulation, the industry was focused on the value approach to selling.

> If we go out and sell the value of the product, then we can all stop worrying about pricing... operators concentrate on persuading consumers that cable is more valuable than the rates being charged ("How to Raise Rates and Survive," Broadcasting, National Cable Television Association, 1987).

of market performance. Excessive profitability is another such measure. Our analysis of both cable industry behavior and market prices for cable systems (the ratio of sales price to what it would cost to build a system from scratch) has shown the clear existence of monopoly rents.[71]

Table IV-2 shows estimates of the transactions price for cable systems compared to estimates of reproduction costs. There is no doubt that there was a tremendous increase in q ratios after deregulation.

These numbers show that at the time of deregulation systems were being sold at about 1.5 time what it would cost to build them from scratch. This ratio rose steadily until 1990, when systems were selling at over three times their reproduction cost.

This means that if entrepreneurs could simply enter the market and put up competing systems, they could do so at a much lower cost. Needless to say, if competitors could actually enter the market, there is no way that incumbent firms could command such a premium price for their systems.

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[71] Direct estimates of price cost margins are virtually non-existent. Robert Rubinovitz (Market Power and Price Increases for Basic Cable Service Since Deregulation, (Economic Analysis Regulatory Group, Department of Justice, August 6, 1991), finds that about half of the price increases since 1984 are due to the exercise of market power.

**TABLE IV-2**
**ESTIMATES OF SALES PRICE AND REPRODUCTION COST FOR CABLE SYSTEMS BEFORE AND AFTER DEREGULATION**

| YEAR | AVERAGE PRICE (a) | REPRODUCTION |
|---|---|---|
| 1977 | 391 | |
| 1978 | 355 | |
| 1979 | 426 | |
| 1980 | 657 | |
| 1981 | 793 | |
| 1982 | 922 | |
| 1983 | 1026 | 645 (b) |
| 1984 | 948 | |
| 1985 | 1008 | |
| 1986 | 1341 | 400 to 723 (c) |
| 1987 | 1723 | |
| 1988 | 1998 | 603 (d) |
| 1989 | 2293 | 480 to 500 (e) |
| 1990 | 2031 | 614 (f) |
| 1991 | 1753 | |
| 1992 | 1766 | |

a) Kagan Associates Inc., Cable TV Master Database, various issues.
b) H. L. Vogel, Entertainment Industry Economics (Cambridge University Press, Cambridge, 1986).
c) Shooshan and Jackson, Opening the Broadband Gateway: The Need for Telephone Company Entry Into the Video Services marketplace, October 1987.
d) Shooshan and Jackson, Measuring Cable Industry Market Power, March 2, 1990.
e) Leland L. Johnson and David P. Reed, Residential Broadband Services By Telephone Companies? (Santa Monica, Rand, 1990).

In the cable industry, entry is extremely difficult. Incumbents hold a franchise and they resist over-building with a vengeance.[72] Moreover, even if a potential entrant exists, the integrated nature of the industry denies that entrant access to programming, which is necessary to compete.[73] The best and most direct interpretation of Tobin's q in this case is that it represents a massive monopoly premium, earned by cable operators who possess market power.

## C. THE INDUSTRY VIEW

### 1. SYSTEM GROWTH

Industry analysts have developed a convoluted theory to try to explain away the evidence of market failure and to claim that any reregulation of the industry would cause it to decline and hurt consumers.[74] Regardless of the failure of competition to

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[72] Senate Committee Report at 13-14; House Committee Report at 45; Noam, 1984, op. cit., at 15.

[73] Senate Committee Report at 24-24; House Committee Report at 40-43 and House floor debate on the Tauzin amendment, op. cit.

[74] For these purposes we focus on the eleventh hour, anti-cable legislation studies by John Woodbury, et al., Assessing the Effect of Rate Deregulation on Cable Subscribers (ICF Consulting Associates, May 3, 1990) and Carl E. Hunt, Analysis of Proposed Federal Cable Legislation, August 24, 1992.

The Hunt Study done for TCI is based on the premise that the rate increases achieved by the sale of cable systems are based on legitimate costs and have failed to render cable systems profitable. This will put pressure on regulators to raise rates to ensure adequate returns to cable owners. Given this fact, any

develop, they argue that price increases were necessary to support quality increases. These are of value to consumers, as evidenced by their willingness to pay. Willingness to pay is demonstrated by increases in subscribers, in spite of increasing prices.

The theory is based on three fundamental assumptions --

1) There is little or no relationship between increasing system size (homes passed) and increasing numbers of subscribers.

2) There is no relationship between increasing income and numbers of subscribers.

3) The cable legislation (now the 1992 Cable Act) would roll rates back to 1984 levels, but since every penny of those rate increases were necessary to achieve improved quality, consumer welfare would be reduced.

To evaluate these studies the key question that must be answered is whether or not a natural process of system growth

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technological or institutional changes caused by legislation will result in additional costs passed through to consumers. Among the major costs calculated by the author are retransmission fees, addressability costs, and returns to regulated cable industry investment.

These two papers are flip sides of the same coin. The ICF paper purports to estimate the benefit of deregulation, which would turn into costs of reregulation. The TCI paper purports to demonstrate the additional costs from reregulation. They share a fundamental premise -- that every penny of rate increase since deregulation was necessary to the technological progress and financial stability of the industry.

would account for the growth of the system during a period of rising prices. The key characteristics that must be discounted are system size (homes passed) and income.

How can the cable industry interpretation of the facts differ so dramatically from the apparent trends discussed above? The industry focuses not on the fact that growth has slowed, but on marginal changes in penetration.

In the three years before deregulation, cable systems passed 19.3 million more homes, but added only 11.2 million new subscribers. In the first five years after deregulation, the system passed 22.5 million more homes, but added 15.1 million new subscribers. This compares the Reagan recession with a period of strong economic growth.

To take a more balanced view, in the 9 years before deregulation, cable systems added 32 million subscribers, but they passed 56 million additional homes. In the seven years since deregulation, they added 19.5 million subscribers, but passed only 27.5 million new homes. At the margin, more subscribers were added. The increasing "capture" of potential subscribers is the key for the authors. However, we have seen that the differences in capture rates are not very large and this is part of the maturation process.

Our hypothesis is supported by more than this macro data. It is most ironic to find that the authors' own econometric analysis substantiates this point. In every specification to predict the numbers of subscribers, the size of the cable system is strongly related to homes passed. At a minimum, the increase in the number of homes passed accounts for three-quarters of the increase in subscribers.

Nor can the industry salvage its argument by asserting that more homes were passed as a result of deregulation. The annual growth rate of homes passed was larger before deregulation than after. Even in absolute terms, more homes were passed per year prior to deregulation than after.

We reach a similar conclusion about income effects. Both macro and micro evidence suggests that cable TV service is positively related to income -- as people get richer they buy more of it. Selective, unrepresentative samples have been used to obscure this fact.[75] The bottom line is that there is

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[75] The industry has run a regression analysis on a small sample of systems to demonstrate that there is no significant relationship between income and subscribers or penetration rates. However, their sample was not representative of the nation. The average income in the sample in 1984 was $34,149 while it was $34,107 for 1989. Thus, the empirical result suggests a declining income, when for the nation as a whole, it was rising.

Moreover, the standard deviation for income was about $6,830 in 1989 and $7,299 in 1989. This means that approximately 95 percent of all households had incomes between $21,000 and $47,000. In the population at large less than 66 percent of the population falls in this range. If you have a sample with a restricted income

overwhelming evidence that income elasticities are in the range of .5 to 1.0.

## 2. TOBIN'S Q

After first attempting to deny that Tobin's q had grown dramatically, the cable industry fell back on efforts to justify the increase.[76] Some of these arguments are similar to those recently put forward in an effort to argue that deregulation increased quality.

These q ratios cannot be explained away, however, except by monopolistic pricing.

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distribution, you are likely not to find the true income effect.

It should also be noted that the sample is not representative of the nation on the penetration variable. On an unweighted basis, the penetration rate in their sample is very high in 1984 (59.2 percent) and exhibits almost no growth by 1989 (60.7 percent). On a weighted basis, the sample is low in 1984 (54.1 percent) and shows little growth by 1989 (55.2 percent). The national numbers were 56.5 percent and 61.5 percent. The absence of income variation and the absence of growth in the total sample could well have combined to give a result not representative of the nation.

Interestingly, when the authors do the most straightforward analysis, which includes only systems that were regulated in 1984 and deregulated in 1989, they show a substantial income effect, with a T-statistic larger than one. The income elasticity is .75 (a one percent increase in income is associated with a .75 percent increase in subscribers).

[76] Shooshan and Jackson, Measuring Cable Market Power: Recent Developments, December 1988, S. J. Grossman, On the Misuse of Tobin's Q To Measure Monopoly Power, February 26, 1990.

First, a great deal of evidence, in addition to Tobin's q ratios, suggests the exercise of market power. This includes increasingly concentrated markets, direct evidence of anti-competitive activity (including refusals to deal, efforts to obtain exclusivity), and anti-consumer behavior (including activities such as efforts to impose negative check-offs and tie-in sales).[77]

Moreover, the precipitous rise in the ratio after deregulation strains the credibility of alternative explanations. One must accept a dramatic rise in good will and management skills or research and advertising after deregulation to buy these arguments. Given the failure of the cable industry to deliver on many of its service promises, it is hard to accept the good will or management arguments.[78] The nature of programming did change after deregulation and penetration did increase, but, as discussed above, there is no evidence to support the industry's claim that this required the massive increases in rates that have sustained the run up in cable system sales prices.

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[77] Senate Committee Report at 4-23; House Committee Report at 26-38.

[78] "Television," Consumer Reports, Sept. 1991.

## PART 3: RATE REGULATION UNDER THE CABLE ACT

## V. DETAILED REGULATION IN THE CABLE ACT

### A. THE FUNDAMENTAL REGULATORY CONSTRAINT ON RATES

At the heart of the Act is a plan for rate regulation. It is extremely important in crafting a regulatory scheme to understand not only the general principles, as discussed above, but also the ultimate constraints on rates for all categories of service. Congress identified three sets of overarching constraints on rates which bind the regulation of rates together.

- It set limits on how joint and common costs can be allocated between services.
- It established limits on the profitability of basic services, with a consideration of the overall profitability of the cable operator.
- It insisted that the retiering of services not do harm to the public, as defined under the Act.

#### 1. JOINT AND COMMON COSTS

It is well known in the economic literature that a monopolist or any seller possessing market power will seek to price goods and services to recover the largest share of costs on those goods and services which face the least competition and have the lowest elasticity of demand. This will lead to the

highest rate of profit overall. In fact, it is recognized that even where the overall level of profit is regulated, the seller will still seek to price in a similar manner, if for no other reason than to face less market discipline.

The Conference Report makes it clear that this tendency was to be counteracted by the Commission. It requires the Commission to prevent the miscategorization of direct costs for non-basic services as joint and common costs.

> Direct costs of providing non-basic cable services are not considered joint and common costs and are not recovered in the rates charged for basic cable service.[79]

It established principles to guide the allocation of true joint and common costs that sought to minimize the burden on basic service.

> Joint and common costs are recovered in the rates of all cable services.[80]

After scrupulous separation of the direct cost of services, the allocation of joint and common costs to basic service would have an upper limit set by the per channel allocator.

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[79] Conference Report at 63.

[80] Conference Report at 63.